

ABSTRACT**MULTIPLE INPUT/OUTPUT ECDL CAVITY LENGTH AND FILTER
TEMPERATURE CONTROL**

[0066] A servo or control technique and apparatus for an external cavity diode laser (ECDL) are described. Coarse tuning adjustments for the ECDL may be performed by varying the temperature of tunable filters. Fine tuning adjustments may be performed varying the temperature of the ECDL sled (base) to vary the length of the cavity via thermal contraction and expansion. A controller comprises a coupler matrix that mathematically relates multiple control signal inputs for varying the temperatures of the tunable filters and sled to produce multiple outputs used to control, for example, thermal-electric cooler (TEC) elements associated with the tunable filters and sled.